FIRE II Cirrus
Mission Summary

Date: November 19, 1991
Julian Day: 323
Experiment Day: 7

Summary | Active Sensors | Passive Sensors | Sonde and Sfc Met

Mission Scientist: David Starr
Deputy Mission Scientist: None

Mission Objective:

No specific cirrus objective as weather conditions were not favorable.

Mission Description:

Aircraft Mission was cancelled due to inclement weather. Radar, satellites and rawinsonde systems collected good data on developing frontal system.

Weather Synopsis:

Rain fell off and on in southeast Kansas all day. The Coffeyville area remained under a nimbostratus overcast just to the west of an active convective outbreak over the Ark-La-Tex region. A shallow frontal passage occurred in the morning hours. Temperatures made it to the mid 50's before dropping into the upper 40's. Surface winds were light and variable generally shifting from southerly to northerly with the frontal passage.

Synoptic Situation:

Low pressure system over the Rockies strengthened as it moved east along the Kansas/Oklahoma border. A fairly stationary upper level trough axis lay along the Colorado-Kansas border and into the Texas Panhandle. A large convective outbreak occurred ahead of the front in east Texas, Arkansas, Missouri, and up into the southern Great Lakes region. East Kansas remained on the western fringe of this activity all day keeping low clouds and rain in the area. Despite the southwesterly flow, the upper troposphere remains quite dry over the region except for some moisture injected from convective anvils.

Aircraft	Depart	Land	Notes
All Aircraft			No flights

Satellite	Hub Overpass Time	Zenith Angle	Azimuth Angle	RAOB
NOAA-11	20:51:36	0.58	291.30	yes
	09:16:06	43.31	100.30	yes
NOAA-12	14:07:00	24.60	102.25	yes
	01:26:48	3.39	68.59	yes

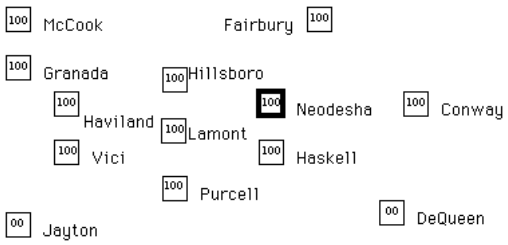
Rawinsonde Operations:

- Inner NWS stations (Type A): Enhanced mode @ 12, 18, and 00 UTC
- Outer NWS stations (Type B): Routine @ 12 and 00 UTC
- Hub CLASS station: Satellite overpasses @ 14, 21, 02, 09 UTC
  - and enhanced mode @ 12, 18, and 00 UTC
- Remote CLASS stations: Enhanced mode @ 12, 18, and 00 OTC
- Hub GSFC/WFF station: None
- CSU Parsons station: Launches @ 15 and 17 UTC

FIRE Profiler Status:

- CSU 405 MHz @ Parsons: Continuous operation (no RASS)
- PSU 50 MHz @ Coffeyville: Not operational
- NOAA 405 MHz @ Coffeyville: Not operational

NWS Wind Profiler Status:



SPECTRE Operations:

No operations due to inclement weather (rain).

Aircrew/Mission Scientist Debrief Notes:

A long day on standby. PSU radar data on nimbostratus rain system with embedded convective cells was impressive. NOAA radar studies similarly good. Supported by enhanced mode regional rawinsonde observations and excellent view-angle polar orbiter satellite observations.

Highlights of FIRE Operations:

- Collected excellent continuous radar and Doppler radar observations of a nimbostratus rain system with a well-defined bright band and penetrative convective regions.

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Instrument Logs

Active Sensors

Active Sensor	UTC Hour																								Notes
	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	
Utah Lidar H																									NOT OPERATIONAL
LaRC Laser Ceilometer H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Wisc HSR Lidar H																									NO OBSERVATIONS
Wisc Vol Image Lidar																									NO OBSERVATIONS
GSFC RAMAN Lidar H																									NO OBSERVATIONS
NOAA CO2 Lidar H																									NO OBSERVATIONS
NOAA Radar H			X	X	X	X	X																		
PSU Radar H			X	X	X	X	X	X	X	X	X	X	X	X											
PSU Laser Ceilometer H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PSU 50 MHZ Wind Prof H																									NOT OPERATIONAL
PSU/NOAA 50 MHz RASS H																									NOT OPERATIONAL
NOAA 405 MHz RASS H																									NOT OPERATIONAL
LaRC Lidar P		X	X	X	X																				
CSU Wind Prof/RASS P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	PROFILER ONLY
CSU Laser Ceilometer P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

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Passive Sensors

Passive Sensor	UTC Hour																								Notes
	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	
NOAA μ-wave Radiometer H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
NOAA Sun Photometer H																									NO OBSERVATIONS
NOAA H20 Photometer																									NO OBSERVATIONS
NOAA IR Flux Radiom. H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
NOAA Dobson Ozone H																									NO OBSERVATIONS
NOAA Surface Ozone H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
NOAA Trace Gas H																									NO OBSERVATIONS
PSU μ-wave Radiometer H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	SOME NOISE PROBLEMS
PSU Sun Photometer H																									NO OBSERVATIONS
PSU Solar Flux Radiom. H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PSU IR Flux Radiometers H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
PSU Sky Video H			X	X	X	X	X	X	X	X	X														
Utah IR-Window Radiom. H																									NOT OPERATIONAL
Utah Sky Video H																									NOT OPERATIONAL
LaRC Video H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
AFGL Sky Imager H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Ames Radiometer H																									NO OBSERVATIONS
Denver Solar Radiom. H																									NO OBSERVATIONS
Denver IR-Spectrometers H																									NO OBSERVATIONS
GSFC IR-Spectrometer H																									NO OBSERVATIONS
Wisc. IR-Spectrometer H																									NO OBSERVATIONS
MRI Sun Photometer H																									NO OBSERVATIONS
MRI IR Radiometer H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
MRI Spectro-Radiom. H																									NO OBSERVATIONS
MRI Solar Flux Radiom. H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
GSFC Photometer H																									NO OBSERVATIONS
CSU Sun Photometer P																									NO OBSERVATIONS
CSU IR-Window Radiom. P				X	X	X																			

CSU Solar Flux Radiom. P	X	X	X	X	X	X	X	X	X	X	X	X	X	X											
CSU IR Flux Radiometers P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
CSU IR-Spectrometer P																									NO OBSERVATIONS
CSU Sky Video P				X	X	X	X																		

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Sondes and Surface Meteorology

Sondes + Sfc Met Sensor	UTC Hour																							Notes
	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	
NOAA Ozone Sonde H																									NO LAUNCHES
WFF Sonde H																									NO LAUNCHES
NCAR Cloud Ice Sonde H			X																						SONDE NOT RECOVERED AS OF 21/91
NCAR/CLASS Sonde H	X		X				X			X			X	X								X			
NCAR PAMS H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
NCAR/CLASS (remote)	X						X						X												SOME MISSING WINDS AT ARKANSAS CITY SITE
NCAR PAMS (remote)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	PARSONS DOWN UNTIL 15 UTC
CSU Sonde P				X		X																			
CSU Sfc Meteor. P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Type A NWS Sondes	X						X						X												
Type B NWS Sondes	X						X						X												
PSU Sfc Meteor H	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	